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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,543	01/29/2004	Ming Zhang	j mz-0018	3103
7590	03/22/2005		EXAMINER	
Ming (Jason) Zhang 5270 Rosedale Avenue Montreal, QC H4V 2H6 CANADA			COURSON, TANIA C	
			ART UNIT	PAPER NUMBER
			2859	

DATE MAILED: 03/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/766,543	ZHANG, MING 	
	<b>Examiner</b>	<b>Art Unit</b>	
	Tania C. Courson	2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-5,7-11,13-20,22-26 and 28-31 is/are rejected.
- 7) Claim(s) 6,12,21 and 27 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 29 January 2004 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All
  - b) Some \*
  - c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 29JAN04.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the following must be shown or the feature(s) canceled from the claim(s):

- a) claims 2 and 17, line 6, respectively, "capillary holes";
- b) claims 3 and 18, line 3, respectively, "a layer of additional adhesive";
- c) claims 4 and 19, line 2, respectively, "an additional transparent cover attached to the top by the additional adhesive";
- d) claims 5 and 20, line 2, respectively, "of different chemical coatings";
- e) claims 6, 21 and 27, line 3, respectively, "a fluid inside";

No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required:

- a) Claims 9, 10, 24, 25 recites the limitation "a specific temperature ranged between 200F and 500F" in section (d), although the specification doe not recite a range.

***Claim Objections***

3. Claims 7-9, 15, 22, 24-25, and 30 are objected to because of the following informalities: it is unclear how “/“ defined. For example, does “shaft/shaft bearing” mean “shaft and shaft bearing” or “shaft or shaft bearing”. Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 31 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Independent claim 16, recites on line 12, a “chemical coating” which describe an overheat indication assembly. Claim 31 fails to further limit the components of the “chemical coating” on the overheat indication assembly.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 1-2, 5, 7-8, 11, 13-14, 16-17, 20, 22-23, 26 and 28-29 are rejected under 35

U.S.C. 102(b) as being anticipated by Mac Donald (US3,877,411).

Mac Donald discloses in Figures 1-4, a temperature indicator comprising:

With respect to claims 1-2, 5, 7-8, 11, 13-14:

- A) (a) a component of a machinery or a vehicle that generates internal heat in operation (Fig. 4);
  - (b) a high temperature zone in said component of the vehicle or machinery once said internal heat is generated (Fig. 4);
    - (c) a visible zone on exterior of said vehicle or machinery that is readily accessible for visual inspection (Fig. 4);
      - (d) a highly thermal conductive element (10) embedded in the vehicle or machinery, with one end located adjacent to said high temperature zone and with the other end located in said visible zone (Fig. 4);
        - (e) an overheat indication assembly (13-15) applied to the end of highly thermal conductive element located in the visible zone (Fig. 4), said overheat indication assembly having at least one chemical coating (14) that melts once a specific temperature is reached due to excessive amount of internal heat being generated by said component of the vehicle or machinery (column 2, lines 11-21);
  - B) wherein the overheat indication assembly having a temperature indicating label (13-15) comprising, in addition to the chemical coating:

- (a) a paper to which the chemical coating is deposited (column 2, lines 11-21), said paper being in a different color from the chemical coating (Figs. 2-3) and drawing the melted chemical coating into capillary holes in the paper once the specified temperature is reached (Figs. 2-3);
  - (b) an adhesive backing (column 2, lines 11-21) and a transparent protective film (15) that envelop the paper and the chemical coating (Fig. 1), said adhesive backing being attached to the end of the highly thermal conductive element located in the visible zone (Fig. 1).
- C) wherein the temperature indicating label having a plurality of different chemical coatings (Fig. 3), each coating melts at a different temperature (Fig. 3);
- D) wherein the component is a shaft/shaft bearing assembly in a rotary machinery or a vehicle (Fig. 4);
- E) wherein the component is an axle/roller bearing assembly of a rail car wheel set, comprising at least an axle, a roller bearing mounted to the axle and a bearing adapter mounted onto the roller bearing (Fig. 4);
- F) wherein the component is a frictional component mounted on a shaft, said frictional component generates heat during frictional engagement (Fig. 4);
- G) wherein the frictional component is a railway wheel or a railway brake disc for vehicle breaking (Fig. 4);
- H) (a) the highly thermal conductive element is a cap screw mounted to the railway wheel or railway brake disc with end of the cap screw located inside

the wheel or the brake disc and head of the cap screw located in the visible zone (Fig. 4);

(b) the overheat indication assembly mounted to the head of the cap screw includes a temperature indicating label that changes color at a specific temperature (Fig. 3);

(c) the temperature indicating label is encapsulated and sealed to the head of the cap screw by a layer of adhesive (15).

With respect to method claim 16-17, 20, 22-23, 26 and 28-29: The method steps claimed will be met during the normal operation of the apparatus stated above.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 3-4, 9-10, 15, 18-19, 24-25 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mac Donald .

Mac Donald discloses a temperature indicator, as stated above in paragraph 7.

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Mac Donald does not disclose a layer of additional adhesive, an additional transparent cover, an additional highly thermal conductive element, an additional overheat indication assembly and a specific temperature ranged between 200F and 500F

Regarding claims 3-4, 15, 18-19 and 30: Mac Donald discloses a temperature indicator having an adhesive, a transparent cover, a highly thermal conductive element and an overheat indication assembly. It would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide an additional adhesive, a transparent cover, a highly thermal conductive element and an overheat indication assembly, respectively , since it has been held that the mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co., 193 USPQ 8. Therefore, one skilled in the art would use a multiple of the adhesive, transparent cover, highly thermal conductive element and overheat indication assembly in order to suit the needs of the user of the device.

Regarding the temperature range: Mac Donald discloses a temperature indicating label having a range between 180F and 350F but does not disclose a particular value for this parameter. However, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to provide a specific temperature ranged between 200F and 500F , since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the “optimum range” involves only routine skill in the art. In re Aller, 105 USPQ 233. Therefore, one skilled in the art would change the optimum range of the temperature indicating label in order to suit the needs of the user of the device.

With respect to claim 31: the prior art of record has not been applied to claim 31 due to the indefinite description as stated above in paragraph 5.

***Allowable Subject Matter***

10. Claims 6, 12, 21 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form correcting the claim objections and including all of the limitations of the base claim and any intervening claims.

***Conclusion***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The prior art cited on PTO-892 and not mentioned above disclose a temperature indicator:

Zhang (US 2003/0006655 A1)

Sammataro et al. (US 6,861,836 B2)

Zhang (US 6,373,394 B1)

Denny et al. (US 5,633,628)

Kaufman et al. (US 4,812,826)

Reicher et al. (US 4,220,300)

Belmont (US 4,119,284)

Payne (US 4,016,762)

McLean (US 3,569,695)

Jamison et al. (US 3,442,249)

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tania C. Courson whose telephone number is (571) 272-2239. The examiner can normally be reached on Monday-Friday from 8:00AM to 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez, can be reached on (571) 272-2245.

The fax number for this Organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



DIEGO F.F. GUTIERREZ  
SUPERVISORY PATENT EXAMINER  
GROUP ART UNIT 2859

TCC  
March 20, 2005

CHRISTOPHER W. FULTON  
PRIMARY EXAMINER